

## A SYSTEMATIC STUDY OF NORTH AMERICAN PRIONONYX

(Hymenoptera: Sphecidae)

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Since the general work of Fernald (1907) on Sphecini, the only systematic paper dealing with North American *Priononyx* was that of R. M. Bohart (1958). The latter described one new species and presented a key to the genus in which the females of *P. thomae* (Fabricius) and *pubidorsum* (Costa) were separated for the first time. A further study under Bohart's direction has revealed additional characters of value and has made it necessary to remove one species from synonymy.

The conformation of the clypeus was used by Bohart to separate the females of *thomae* and *pubidorsum*. Although this is a valid method, it was found that the palpi offered much better characters. In *thomae* the maxillary palpus is more than twice as long as the labial palpus, whereas in *pubidorsum* the two palpi are about equal in length (figs. 7, 8).

Closer examination of *pubidorsum* specimens from many parts of North America revealed the presence of two specific entities. One of these, *canadensis* Provancher (1889), was placed in synonymy by Fernald (1907). *P. canadensis* differs in the male by having narrow fossulae on antennal segments V-VII instead of on segments V-VIII as shown in figs. 1 and 2. The females can be distinguished by the silvery pubescence of the prothoracic lobes, which is marginal in *canadensis* and covers more than one-half of the lobe in *pubidorsum*. The known range of *canadensis* is northern California, Idaho, Nevada, Oregon, Utah, and Washington. *P. pubidorsum* is a more southern species, occurring in Arizona, California, Nevada, New Mexico, Texas, and south through Mexico into South America. There is some overlapping of the two species in California and Nevada.

Antennae of male *Priononyx* have good taxonomic characters, which are illustrated in figs. 1-6. The shallow depressions or fossulae occur on segments V-VIII except in *canadensis* which has none on VIII, and in *ferruginea* (Fox) which has none. They are narrow in *canadensis*, *pubidorsum*, and *subatrata* Bohart, but broad in *atrata* (Lepeletier), *thomae* and *fervens* (Linnaeus). In *subatrata* the fossula on segment VIII is abbreviated.

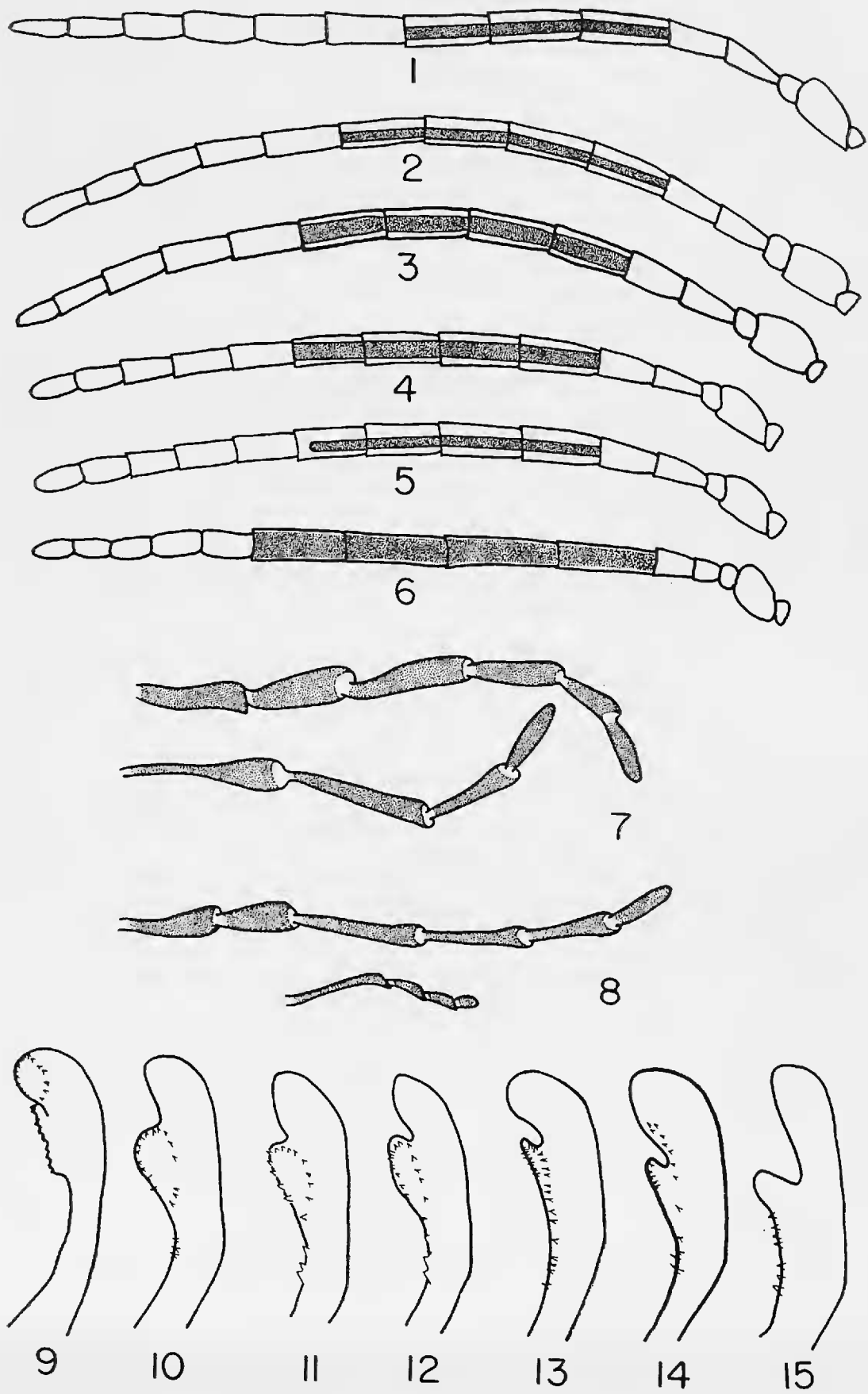
In the male genitalia the aedeagus provides the best diagnostic characters, particularly in the size and shape of the subapical lobe. The aedeagi of the seven species of our area are illustrated in figs. 9–15.

#### KEY TO THE SPECIES OF NORTH AMERICAN PRIONONYX

1. Antennae 13-segmented, some flagellar segments with conspicuous flattened areas (fossulae) except in *ferruginea*; abdomen without sting (males) ..... 2
- Antennae 12-segmented, flagellar segments without fossulae; abdomen with a sting ordinarily visible (females) ..... 8
2. Abdomen black or brownish black ..... 3
- Abdomen variously marked with red ..... 4
3. Antennal segment VI with a broad fossula extending entire length of segment; scutum dull, individual punctures obscured by shagreening; scutellum dull ..... *atrata* (Lepeletier)
- Antennal segment VI with a narrow fossula not reaching distal end of segment; scutum partly polished, many individual punctures distinct; summit of scutellum shiny ..... *subatrata* Bohart
4. Antennal segment I much longer than third; scutum shiny in part and with numerous distinct punctures; free clypeal edge convex medially ..... *ferruginea* (Fox)
- Antennal segment I shorter than third; scutum completely shagreened or striate; free clypeal edge concave medially ..... 5
5. Sternite VI with a broadly U-shaped median emargination ..... 6
- Sternite VI entire medially ..... 7
6. Antennal segments V–VIII with fossulae ..... *pubidorsum* (Costa)
- Antennal segments V–VII with fossulae ..... *canadensis* Provancher
7. Wings lightly brown-stained; scutellum low ..... *thomae* (Fabricius)
- Wings dark brown violaceous; scutellum gibbous ..... *fervens* (Linnaeus)
8. Wings lightly brown-stained at most; abdomen usually bright red ..... 9
- Wings dark brown violaceous; abdomen black or dark red ..... 12
9. Clypeal free edge entire medially; leg bristles pale; wings clear ..... *ferruginea* (Fox)
- Clypeal free edge notched medially; leg bristles black; wings somewhat stained ..... 10
10. Maxillary palpus more than twice as long as labial palpus ..... *thomae* (Fabricius)
- Maxillary palpus about equal in length to labial palpus ..... 11

#### EXPLANATION OF FIGURES

Figs. 1–6, antennae of male *Priononyx*: 1, *canadensis*; 2, *pubidorsum*; 3, *fervens*; 4, *atrata*; 5, *subatrata*; 6, *thomae*. Figs. 7–8, maxillary and labial palpi of female *Priononyx*: 7, *pubidorsum*; 8, *thomae*. Figs. 9–15, distal part of *Priononyx* male aedeagus, lateral view: 9, *ferruginea*; 10, *thomae*; 11, *pubidorsum*; 12, *canadensis*; 13, *subatrata*; 14, *atrata*; 15, *fervens*.



11. Prothoracic lobe with posterior marginal pubescence only; never more than one-half covered.....*canadensis* Provancher  
- Prothoracic lobe with pubescence more than one-half covered.....*pubidorsum* (Costa)  
12. Clypeal bristles partly pale; scutum covered with strong longitudinal striae.....*fervens* (Linnaeus)  
- Clypeal bristles black; scutum not strongly striate.....13  
13. Clypeus with silvery to golden appressed pubescence; scutum completely shagreened dull; scutellum not especially raised or shiny  
.....*atrata* (Lepeletier)  
- Clypeus with black, appressed pubescence; scutum somewhat smooth and distinctly punctured toward middle; scutellum gibbous, shiny  
.....*subatrata* Bohart

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